DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-009869
Date Inspected: 06-Oct-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below		**CWI Present:**	☑ Yes	☐ No
Inspected CWI report:	☐ Yes	☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No	☐ N/A
			Delayed / Cancelled:	☐ Yes ☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG Fabrication

Summary of Items Observed:
CWI Inspectors: Mr. Guo Yan Fei, Mr. She Fu You

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

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This QA Inspector observed ZPMC welder Mr. Xu Guo Xin, stencil 059443 is using flux cored welding procedure WPS-B-T-2133 to make deck plate weld DP3069-001-140. This weld attaches a stiffener plate to the inside of closed rib for OBG deck panel DP3069-001. This QA Inspector observed the base material had been cleaned of oxides where the stiffener welds are to be installed. This QA Inspector observed a welding current of approximately 200 amps 250 volts and Mr. Xu Guo Xin is certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xiang Jie, stencil 059378 is using flux cored welding procedure WPS-B-T-2133 to make deck plate weld DP3069-001-129. This weld attaches a stiffener plate to the inside of a closed rib for OBG deck panel DP3069-001. This QA Inspector observed the base material had been cleaned of oxides where the stiffener welds are to be installed. This QA Inspector observed a welding current of approximately 200 amps 26.0 volts and Mr. Xiang Jie is certified to make this weld. Items observed on this date

appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tang Ke, stencil 062305 is using Gas Metal Arc Welding (GMAW) procedure WPS-B-T-2342-U5(U-rib) to tack closed ribs to deck plate DP3065-001. This QA Inspector measured a welding current of approximately 330 amps and 25.0 volts. Last week this QA Inspector asked ZPMC welder Mr. Tang Ke to show his ZPMC issued welder identification card which identifies which welding processes and positions he is certified to utilize for welding of Caltrans bridge components and today Mr. Tang Ke indicated that was not able to produce a welder identification card. Today this QA Inspector informed ZPMC CWI Mr. Guo Yan Fei that for the last week Mr. Tang Ke did not appear to be in possession of a ZPMC welder identification card. Mr. Guo Yan Fei discussed this issue with the shop supervisor and after a few minutes the shop supervisor was able to locate the welder identification card that states Mr. Tang Ke has been certified by ZPMC to utilize the GMAW process for welding of Caltrans materials. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector performed random magnetic particle inspections of approximately 20 percent of the tack welds that attach closed ribs to deck panels DP3058-001 and DP3014-001. These two deck panels are clamped to the convex shaped welding platforms that are adjacent to overhead welding gantry #2. Earlier in this shift ZPMC conducted a “Production Monitoring Test” using gantry #2 and if the testing results are satisfactory these two deck panels are scheduled to be welded during the dayshift. These deck panel tack welds appear to have been previously MT inspected by ZPMC personnel and several of the welds appear to have been ground to eliminate MT indications which had been marked by ZPMC MT Inspectors. These inspections were performed on an informational basis and no TL-6028 Magnetic Particle Test Report has been issued to document these inspections.

DP3014-001: This QA Inspector performed MT of 20% of the tack welds and the tack welds that were MT inspected by this QA Inspector appear to comply with AWS D1.5 magnetic particle inspection requirements.

DP3058-001: Weld #7, This QA Inspector performed MT of 20% of the tack welds and one (1) MT linear indication was observed in the end of the 8th tack weld from the west end of the closed rib. ZPMC CWI Mr. Guo Yan Fei looked at this indication and he agreed it should be removed. Following ZPMC grinding this indication this QA Inspector performed MT inspections and the indication appears to have been removed.
Weld #5 had one tack weld which had not been completely ground on the top edge. ZPMC CWI Mr. Guo Yan Fei looked at this weld and he agreed it should be ground. Following grinding this QA Inspector performed MT of 20% of the tack welds and thee welds appear to comply with AWS D1.5 magnetic particle inspection requirements.
This QA Inspector did not observe any locations where the deck panel tack welds had been marked by the ZPMC Inspectors as being MT acceptable. This inspection was performed on an informational basis and no TL6028 Magnetic Particle Test Report is being generated.

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This QA Inspector observed ZPMC welder Mr. He Jun Rong, stencil 201215 appears to have recently used flux cored welding procedure WPS-B-T-2113 to make weld DP26-001-018. This QA Inspector observed that ZPMC QC representative Mr. Xu Tau has recorded a welding current of 217 amps and 26.7 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhao Ming Ming, stencil 053338 is using shielded metal arc welding procedure specification WPS-B-P-2112-FCM-1 to make tack welds SEG057B-015 and SEG057B-016. This QA Inspector observed a welding current of approximately 150 amps. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which appears to be at an ambient temperature, and the welding electrodes on the interior of the storage container appear to be warm to the touch. ZPMC welder Mr. Zhao Ming Ming saw the QA Inspector monitoring the temperature of the storage container and he then connected to the welding power supply cable to the electrically heated electrode storage container. This QA Inspector asked ZPMC QC Representative Mr. Xu Tao if ZPMC welder Mr. Zhao Ming Ming had a ZPMC welder certification card and Mr. Tao determined Mr. Ming did not have his welder certification card with him today, but that he will have this card tomorrow. Items observed on this date appeared to generally comply with applicable contract documents. Note: on October 7, 2009 Mr. Ming Ming showed this QA that ZPMC has issued him a welder certification card which documents that he is certified to perform shielded metal arc tack welds in the 2F position.

This QA Inspector observed ZPMC welder Mr. Wang Changming, stencil 047864 is using shielded metal arc process WPS-345-SMAW-4G(4F)FCM-Repair-1 to perform weld repairs on overhead (4G) weld SEG055-020. It appears these repairs were required as a result of areas that had been ground following ZPMC ultrasonic rejections of this side panel to baseplate weld. ZPMC QC representative Mr. Xu Tau informed this QA Inspector that the weld repair documents are in the QA office and are not at the location where this weld is being made. This QA Inspector observed a welding current of approximately 155 amps and Mr. Wang Changming is certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yang Changming, stencil 058242 is using shielded metal arc process WPS-345-SMAW-4G(4F)FCM-Repair-1 to perform weld repairs on overhead (4G) weld SEG055-011. It appears these repairs were required as a result of areas that had been ground following ZPMC ultrasonic rejections of side panels to baseplate welds. ZPMC QC representative Mr. Xu Tau informed this QA Inspector that the weld repair documents are in the QA office and are not at the location where this weld is being made. This QA Inspector observed a welding current of approximately 150 amps and Mr. Yang Changming is certified to make this weld. This QA Inspector observed the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

Inspected By: Dawson,Paul Quality Assurance Inspector

WELDING INSPECTION REPORT

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Reviewed By: Carreon,Albert QA Reviewer